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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,806	09/14/2000	Tsuyoshi Hasegawa	P19378	1232

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GREENBLUM & BERNSTEIN, P.L.C.  
1950 ROLAND CLARKE PLACE  
RESTON, VA 20191

EXAMINER

CHANG, SUNRAY

ART UNIT PAPER NUMBER

2121

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/661,806

Applicant(s)

HASEGAWA ET AL.

Examiner

Sunray Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 33). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4, 6-9, 11-13 and 15-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9, 11-13 and 15-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §11 9**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. §119( a ) -(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO -948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1 - 23 are presented for examination.

Claims 1 - 23 are rejected.

### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claims 1 - 20, and 23 are rejected** under 35 U.S.C. 102(e) as being anticipated by Takashi Iwade et al. (U.S. Patent No. 6,151,026, and referred to as Iwade hereinafter).

3. **Regarding independent claims 1, 20 and 23**, Iwade teaches,

- A rendering method for rendering [rendering process; Col. 3, Line 13] a stereo model [three-dimensional polygonal model, Col. 3, Line 29 – 30], arranged in a virtual space [three-dimensional coordinate, Col. 3, Line 22] and composed of a plurality of planes [polygons, Col. 3, Line 23] having faces on the outer side of an object to be expressed [Fig. 3].

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- A computer [image processing apparatus, Col. 3, Line 16], and a computer-readable recording medium [system memory, Col. 3, Line 15] stored with a program [system program, Col. 3, Line 15] to be executed by computer [image processing apparatus, Col. 3, Line 16], wherein program activates computer to execute [activation program, Col. 3, Line 14].
- Acquiring [geometry processor, Col. 3, Line 21] a second stereo model [Model B, Fig. 8A] corresponding to a first stereo model [Model A, Fig. 8A];
- Making a contour drawing model [three-dimensional polygonal model, Col. 3, Line 29 – 30] by reversing [reverses, Col. 5, Line 2] the individual planes of second stereo model [Fig. 8A, 8B, 9A, 9B];
- Arranging contour drawing model [outline process, Col. 3, Line 29] at a position containing first stereo model [Fig. 8A, 8B, 9A, and 9B]; and
- Drawing first stereo model from [rendering processor, Col. 3, Line 33] a predetermined viewpoint position [Fig. 8B and 9A] and drawing only the planes [Fig. 7], as facing said viewpoint position [Fig. 8B and 9A], of said contour drawing model [rendering of a model, Col. 3, Line 34] in a color [shading, Col. 3, Line 35].
- A color having an identical saturation as a color of the first stereo model [a solid color, Col. 6, Lines 15 - 44], the color of the contour drawing model having a lower brightness than the color of the first stereo model. [slightly changing the color, Col. 6, Lines 15 - 44, Fig. 10 - 15].

4. **Regarding independent claims 2, 6, 11 and 15, Iwade teaches,**

- A rendering method for rendering [rendering process, Col. 3, Line 13] a stereo model [three-dimensional polygonal model, Col. 3, Line 29 – 30], arranged in a virtual space [three-dimensional coordinate, Col. 3, Line 22] and composed of a plurality of planes [polygons, Col. 3, Line 23] having faces on the outer side of an object to be expressed [Fig. 3].
- A computer [image processing apparatus, Col. 3, Line 16], and a computer-readable recording medium [system memory, Col. 3, Line 15] stored with a program [system program, Col. 3, Line 15] to be executed by computer [image processing apparatus, Col. 3, Line 16], wherein program activates computer to execute [activation program, Col. 3, Line 14].
- Acquiring [geometry processor, Col. 3, Line 21] a second stereo model [Model B, Fig. 8A] corresponding to a first stereo model [Model A, Fig. 8A];
- Making a contour drawing model [three-dimensional polygonal model, Col. 3, Line 29 – 30] by reversing [reverses, Col. 5, Line 2] the individual planes of second stereo model [Fig. 8A, 8B, 9A, 9B];
- Arranging contour drawing model [outline process, Col. 3, Line 29] at a position containing first stereo model [Fig. 8A, 8B, 9A, and 9B]; and
- Drawing first stereo model from [rendering processor, Col. 3, Line 33] a predetermined viewpoint position [Fig. 8B and 9A] and drawing only the planes [Fig. 7], as facing viewpoint position [Fig. 8B and 9A], of contour drawing model [rendering of a model, Col. 3, Line 34].
- The planes [Fig. 5] being mapped with a texture having a pattern [Fig. 10, and Fig. 11] containing a change in brightness [Fig. 10, 11, and 13B] or transparency [Col. 4, Lines 20 – 25].

The American Heritage College Dictionary, Fourth Edition, cited as an evidentiary reference, explains “texture” can be the distinctive physical composition or structure of something, esp. with respect to the size, shape, and arrangement of its parts . Thus it is considered that Iwade teaches texture mapping.

**5. Regarding dependent claims 3, 12, and 16,**

- Acquiring a contour drawing model [Model B, Fig. 8A, 8B, 9A, and 9B] corresponding to and larger than stereo model [Model A, Fig. 8A, 8B, 9A, and 9B] and having sides reversed [reverses, Col. 5, Line 2] at its planes corresponding to the individual planes of stereo model [Fig. 8A, 8B, 9A, and 9B].

**6. Regarding dependent claims 4 and 13,**

- Acquiring a contour drawing model [Model B, Fig. 8A, 8B, 9A, and 9B] corresponding to stereo model [Model A, Fig. 8A, 8B, 9A, and 9B], having sides reversed [reverses, Col. 5, Line 2] at its planes corresponding to the individual planes of stereo model and [Fig. 7] having vertexes corresponding to the individual vertexes of the planes [Fig. 7] composing stereo model and set in the normal directions of individual vertexes [Fig. 7, Fig. 8A, 8B, 9A, and 9B].

**7. Dependent claims 5 and 14 are canceled.**

**8. Regarding dependent claims 7 and 17,**

- Enlarging the size of acquired contour drawing model and arranging contour drawing model at a position containing stereo model [Fig. 7].

**9. Regarding dependent claim 8,**

- Enlarging the size of contour drawing model [Fig. 7] by moving the individual vertexes of the planes composing acquired contour drawing model [Fig. 8A], in the normal directions of individual vertexes [Fig. 8A and 8B].
- Arranging enlarged contour drawing model [Model B, Fig. 7], at the position containing stereo model [Model A, Fig. 7].

**10. Regarding dependent claims 9 and 18,**

- Reducing the size of stereo model [hidden surface removal process, Col. 3, Line 35] and arranging contour drawing model [Model B, Fig. 7] at the position containing stereo model [Model A, Fig. 7].

**11. Dependent claims 10 and 19 are canceled.**

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. **Claims 21, and 22 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Iwade, and in view of Bernard Jancewicz (Electromagnetism using bivectors, Institute of Theoretical Physics, University of Wroclaw, 1980, and referred to as Jancewicz hereinafter).

(Iwade as set forth above generally discloses the basic inventions.)

13. **Regarding independent claims 21, and 22,**

Iwade teaches,

- A rendering method for rendering [rendering process, Col. 3, Line 13] a stereo model [three-dimensional polygonal model, Col. 3, Line 29 – 30], arranged in a virtual space [three-dimensional coordinate, Col. 3, Line 22] and composed of a plurality of planes [polygons, Col. 3, Line 23] having faces on the outer side of an object to be expressed [Fig. 3].
- A computer [image processing apparatus, Col. 3, Line 16], and a computer-readable recording medium [system memory, Col. 3, Line 15] stored with a program [system program,



Col. 3, Line 15] to be executed by computer [image processing apparatus, Col. 3, Line 16], wherein program activates computer to execute [activation program, Col. 3, Line 14].

- Acquiring [geometry processor, Col. 3, Line 21] a second stereo model [Model B, Fig. 8A] corresponding to a first stereo model [Model A, Fig. 8A];
- Making a contour drawing model [three-dimensional polygonal model, Col. 3, Line 29 - 30] by reversing [reverses, Col. 5, Line 2] the individual planes of second stereo model [Fig. 8A, 8B, 9A, 9B];
- Arranging contour drawing model [outline process, Col. 3, Line 29] at a position containing first stereo model [Fig. 8A, 8B, 9A, and 9B]; and
- Drawing first stereo model from [rendering processor, Col. 3, Line 33] a predetermined viewpoint position [Fig. 8B and 9A] and drawing only the planes [Fig. 7], as facing viewpoint position [Fig. 8B and 9A], of contour drawing model [rendering of a model, Col. 3, Line 34] in a predetermined color [shading, Col. 3, Line 35].
- The back of each plane being determined. [Col. 4, Lines 26 - 33, and Fig. 5]

Iwade does not teach being determined based upon a sign of an outer product of two vectors of the plane.

Jancewicz teaches being determined based upon a sign of an outer product of two vectors of the plane [Page 180, Col. 1, 2<sup>nd</sup> paragraph], for the purpose of providing a mathematical tool.

It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to modify the teaching of Iwade to include being determined based upon a sign of an outer product of two vectors of the plane for the purpose of providing a mathematical tool.

**Response to Amendment**

**Claim Rejections - 35 USC § 102**

14. Applicant argues that IWADE et al. do not disclose “texture mapping” in **claims 2, 6, 11, and 15** formerly cited in claims 5, 10, 14, and 19. Yet, IWADE et al. do teach the texture claimed by applicants that the planes [Fig. 5] being mapped with a texture having a pattern [Fig. 10, and Fig. 11].

The rejections have been modified for new cited claim paragraphs, modified from former claims 5, 10, 14, and 19, as set forth in current office action.

15. Applicant argues that IWADE et al. do not disclose “color processing and the determination of which side is a face side or back side” in **claims 1, 20, and 23**, which has not been cited formerly. Yet, IWADE et al. do teach “color processing” [Col. 4, Lines 20 – 25, and Col. 6, Lines 15 – 44] and “a predetermined viewpoint position” [Fig. 8B, and Fig. 9A]. Further, the term, “determination of which side is a face side or back side” has not been cited in claims 1, 20, and 23 of former or current amendment.

The rejections have been modified for new cited claim paragraphs as set forth in current office action.

16. Regarding **claims 1, 20, and 23**, applicant argues that saturation and brightness do not appear to be discussed in IWADE et al. The examiner has given little weight of patentability to “saturation and brightness” those have been cited in **claims 1, 20, and 23**. Yet, IWADE et al. does teach those subject matters. The examiner has been taught by Thelma Thompson (Page 2, Analyzing Color in Your Wardrobe, 1<sup>st</sup> version in 1984, e-version in 1997, referred to as Thompson hereinafter) that saturation of color decides pure or grayed hue. IWADE et al. teaches “a special calculation is performed for the model data to simplify the **gray scaling** of the model or to add an outline to the model” [Col. 1, Lines 10 – 20]. IWADE et al. also teaches both model A and model B have a solid color [Col. 6, Lines 25 – 45] means identical. A solid color is full saturation of hue [pure hue, Page 2, Thompson].

The rejections based on reference IWADE et al. are retained still

### **Conclusion**

14. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

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1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sunray Chang whose telephone number is (571) 272-3682. The examiner can normally be reached on M-F 7:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on (571) 272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-746-3506.

Sunray Chang  
Patent Examiner  
Group Art Unit 2121  
Technology Center 2100  
U.S. Patent and Trademark Office

March 9<sup>th</sup>, 2005



**Anthony Knight**  
Supervisory Patent Examiner  
Group 3600